

F-11

Claims

- [c1] 1.A method for treating in a human patient a non-malignant lesion of the esophagus that preferentially accumulates a photoactivatable porphyrin, comprising administering to said human patient in need thereof an effective amount of a precursor of protoporphyrin IX thereby accumulating therapeutic levels of said protoporphyrin IX, and thereafter exposing said lesion to light capable of photoactivating said protoporphyrin IX.
- [c2] 2.A method for detecting in a human patient a non-malignant lesion of the esophagus that preferentially accumulates a photoactivatable porphyrin, comprising administering to said human patient in need thereof an effective amount of a precursor of protoporphyrin IX thereby accumulating therapeutic levels of said protoporphyrin IX, and thereafter exposing said lesion to light capable of photoactivating said protoporphyrin IX.
- [c3] 3.The method of claim 1 or 2, wherein said precursor is 5-amino levulinic acid.
- [c4] 4.The method of claim 1 or 2, wherein said wavelength of light is 350-640 nm.

- [c5] 5.The method of claim 1 or 2, wherein said wavelength of light is 600–700 nm.
- [c6] 6.The method of claim 1 or 2, wherein said method comprises treating or detecting the mucosa of the esophagus.
- [c7] 7.The method of claim 1 or 2, wherein said method comprises treating a premalignant condition in which the normal stratified squamous epithelium of the esophagus is replaced by a metaplastic columnar epithelium.
- [c8] 8.A photosensitizing treatment method for treating non-malignant lesions of the esophagus in a human patient comprising
(a)administering an agent which is not a photosensitizer but induces the synthesis of protoporphyrin IX in vivo and then
(b)exposing the lesions of the esophagus to a wavelength of light within the photoactivating spectrum of protoporphyrin IX.
- [c9] 9.The method of claim 8, wherein said agent induces synthesis of protoporphyrin IX in the heme biosynthetic pathway.
- [c10] 10.The method of claim 8, wherein said agent is a pre-

cursor of protoporphyrin IX.

- [c11] 11.The method of claim 8, wherein said wavelength of light is 350–640 nm.
- [c12] 12.The method of claim 8, wherein said wavelength of light is 600–700 nm.
- [c13] 13.The method of claim 8, wherein said agent is 5–amino levulinic acid.
- [c14] 14.The method of claim 1 or 8, wherein said agent is administered topically.
- [c15] 15.The method of claim 1 or 8, wherein said agent is administered systemically.
- [c16] 16.The method of claim 1 or 8, wherein said light is generated from an artificial light source.
- [c17] 17.The method of claim 1 or 8, wherein said light is only within the absorption spectrum of protoporphyrin IX.
- [c18] 18.The method of claim 1 or 8, wherein said photoactivating light is limited to the red and blue regions of the spectrum.
- [c19] 19.The method of claim 8, wherein said method comprises treatment of the mucosa of the esophagus.

[c20] 20. The method of claim 8, wherein said method comprises treatment of a premalignant condition in which the normal stratified squamous epithelium of the esophagus is replaced by a metaplastic columnar epithelium.

[c21]